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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/686,914

10/14/2003

Erez Yahalomi

7454

7590

07/23/2004

Erez Yahalomi

Tarpad 8

Ramat Hasharon, 47250

ISRAEL

EXAMINER

WILSON, SCOTT R


ART UNIT

PAPER NUMBER

2826

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/686,914	Applicant(s) YAHALOMI, EREZ	
	Examiner Scott R. Wilson	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Drawings***

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the "wave function size in space" as described in the specification. For example, Figure 2a appears to show a plot of wave function amplitude versus spatial dimension. The absolute square of the wave function at the initial energy (5) would therefore give the probability of finding the particle with the initial energy at a particular location in the spatial dimension. After transfer of energy from the incident particle (7), which is itself represented by an indeterminate symbol which appears to be a wave function, the amplitude appears to increase to a new value (6). This is inconsistent, however, because the absolute square would evidently be greater than one, which is impossible. If, the plot of Figure 2a is, however, a two-dimensional spatial representation of a particle wave function, then a person of ordinary skill in the art would want to know what determines the upper, curved boundary of the wave function, which is not disclosed in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 17 recites, in part, "a first part with boundaries at the height of the particle wave function in the first state", which appears to refer to region (17) of Figure 6a, the "height" referring to the boundary between region (17) and region (18). Claim 17 further recites "a second part above the first part which has charged zones on the cavity sides and is in the height of the particle at its second state", the "height" referring to the upper boundary of region (18). A person of ordinary skill in the art would ask what defines the boundary between regions (17) and (18). As drawn, the particle in Figure 6a appears to be in an infinite square well, that is, bounded by an infinitely high potential barrier. Any bounding potential provided by the charged regions (19) and (20) would necessarily be of finite magnitude in a real device, therefore the particle in region (17) would be capable of tunneling into region (18) even in the initial state of Figure 6a, implying that the wave function would always be non-zero in at least a portion of region (18).

Claims 1-27 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph. The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete

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operative device, so that any person skilled in the art can make and use the device. The claim(s) must be in one sentence form only.

Claims 1-6, 14, 15, 17, 21 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of the phrases "wave function size" and "height of the particle wave function" are confusing, since they convey the idea of the wave function amplitude, rather than its extent in space.

Claims 23a and 23b are objected to because of the following informalities: Claim numbers must be integers. These claims should be renumbered as claims 28 and 29.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kane. Kane, Figure 2, discloses a switching device for switching between two states, where the switched state ($V=0$) or ($V>0$) depends on the physical extent of the wave function in space, embodied as the electron wave function shown in the silicon layer below the barrier layer.

Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Kane. Kane, Figure 2, discloses a switching device for switching between two states, where the switched state ($V=0$) or ($V>0$) depends on the dynamic change of the physical extent of the wave function in space embodied as the electron wave function shown in the silicon layer below the barrier layer. The dynamic change of the extent of the wave function is within the scope of a charge current.

Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Halliday and Resnick. Halliday and Resnick, Figure 30-12, discloses a system which may have two states comprising two conductive planes and an electron source (F) in which the electrons travel between the two planes. The two states comprise travel through the region between the source (F) and the planes, and travel between

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the planes. Halliday and Resnick further disclose that this device was used by Thomson to measure the charge-to-mass ratio of the electron by first measuring the position of the electron with no charge on the planes, followed by adjusting a magnetic field to give the same null deflection in the presence of an electric field. Non-zero values for the deflecting magnetic and electric fields imply that the passage of the electron modifies the electric potential between the planes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Scott R. Wilson whose telephone number is 571-272-1925. The examiner can normally be reached on M-F 8:30 - 4:30 Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

srw


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